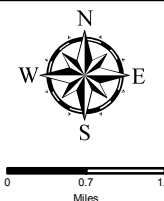


Legend

 Williams Olefins
LLC Plant

Data: Plant Location from
EPA Region 6 GIS
RMP Database;
Basemap from Bing.

US EPA REGION 6 Williams Olefins Ethylene Plant Geismar, LA



EPA R6 GIS

20130613BG01

Printed: 12:01:03 PM 6/13/2013

Williams Olefins, Geismer, Louisiana

Explosion & Fire – 06/13/13

Compliance History

A quick pull of the Williams Olefins Compliance History in Echo indicates:

- 2 formal enforcement actions by LDEQ in the last 5 years with total penalties of \$4500
- Last CAA inspection was conducted 12/19/2011

We understand that Williams Olefins was also in the midst of an expansion effort to increase ethylene production by 600 million pounds by the end of 2013.

EPA Region 6 referred an LDAR case to DOJ in 2009. No significant action on this case to date.

WebEOC History 2004 to 2013 (NRC Reports)

2013	1
2011	4
2010	3
2009	2
2007	6
2005	1
2004	2

There was one EPA response to sulfuric acid in 2007. WebEOC reports included benzene; propylene; butadiene 1,3; sulfuric acid; and oil material/lube/misc.



AIR PERMIT ROUTING/APPROVAL SLIP-Permits



AI No.	5565	Company	Williams Olefins LLC	Date Received	12/12/2011
Activity No.	PER20110004	Facility	Geismar Ethylene Plant	Permit Type	
CDS No.	0180-00029	Permit No.	PSD-LA-759	Expedited Permit	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no

1. Technical Review	Approved	Date rec'd	Date FW	Comments
Permit Writer	<i>Dan</i>		1/13/12	
Air Quality / Modeling	<i>ym</i>		2/14/12	
Toxics				
Technical Advisor	<i>BoT</i>		2/14/12	<i>as noted</i>
Supervisor				
Other				
2. Management Review (if PN req'd)	Approved	Date rec'd	Date FW	Comments
Supervisor				
Manager	<i>DVC</i>		1/17/12	
Assistant Secretary (PN)	<i>AS</i>		2/14/12	
3. Response to Comments (if PN req'd)	Approved	Date rec'd	Date FW	Comments
Supervisor				
Manager				
Administrator				
Legal (BFD)				
4. Final Approval	Approved	Date rec'd	Date FW	Comments
Supervisor				
Manager	<i>DVC</i>		4/11/12	<i>no comments</i>
Administrator	<i>AS</i>		4/11/12	
Assistant Secretary				

1. Technical Review							
PN of App needed	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	Date of PN of App	12/22/11	Newspaper	<i>Gonzales Weekly Citizen</i>		
Fee paid	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no						
NSPS applies	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	PSD/NNSR applies	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	NESHAP applies	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no		
2. Post-Technical Review							
Company technical review	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> n/a	E-mail date	12/25/11	Remarks received	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no		
Surveillance technical review	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> n/a	E-mail date	12/25/11	Remarks received	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		
3. Public Notice							
Public Notice Required	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	PSD					
Library							
PN newspaper 1/City	<i>The Advocate/Baton Rouge</i>		PN Date		EDMS Verification	<input type="checkbox"/> yes <input type="checkbox"/> no	
PN newspaper 2/City			PN Date		EDMS Verification	<input type="checkbox"/> yes <input type="checkbox"/> no	
Company notification letter sent	Date mailed	<i>PPG FEB 15 2012</i> <i>hm</i>					
EPA PN notification e-mail sent	Date e-mailed						
OES PN mailout	Date						
4. Final Review							
Public comments received	<input type="checkbox"/> yes <input type="checkbox"/> no	EPA comments rec'd	<input type="checkbox"/> yes <input type="checkbox"/> no	Date EPA Resp. to Comments-mailed			
Company comments received	<input type="checkbox"/> yes <input type="checkbox"/> no	PN info entered into Permit Sec VI	<input type="checkbox"/> yes <input type="checkbox"/> no	Date EPA approved permit			
Comments							

BOBBY JINDAL
GOVERNOR -



PEGGY M. HATCH
SECRETARY

State of Louisiana
DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

Certified Mail No.: 7005 0390 0006 1029 1533

Agency Interest No. 5565
Activity No.: PER20110004

Mr. Larry G. Bayer
Williams Olefins, LLC
Post Office Box 470
Geismar, LA 70734

RE: Prevention of Significant Deterioration (PSD) permit, Geismar Ethylene Plant Expansion Project, Williams Olefins, LLC, Geismar, Ascension Parish, Louisiana

Dear Mr. Bayer:

Enclosed is the PSD permit for the Geismar Ethylene Plant Expansion Project. Construction of the proposed plant is not allowed until such time as the corresponding Part 70 operating permit is issued.

Please be advised that pursuant to provisions of the Environmental Quality Act and the Administrative Procedure Act, the Department may initiate review of a permit during its term. However, before it takes any action to modify, suspend or revoke a permit, the Department shall, in accordance with applicable statutes and regulations, notify the permittee by mail of the facts or operational conduct that warrant the intended action and provide the permittee with the opportunity to demonstrate compliance with all lawful requirements for the retention of the effective permit.

Should you have any questions concerning the permit, contact Dan Nguyen at 225-219-3395.

Sincerely,

A handwritten signature in cursive script, appearing to read "S. L. Phillips".

Sam L. Phillips
Assistant Secretary

April 11, 2012
Date

SLP: DCN

c: US EPA Region 6

PSD-LA-759

AI No. 5565

**AUTHORIZATION TO CONSTRUCT AND OPERATE A NEW OR MODIFIED
FACILITY PURSUANT TO THE PREVENTION OF SIGNIFICANT DETERIORATION
REGULATIONS IN LOUISIANA ENVIRONMENTAL REGULATORY CODE,
LAC 33:III.509**

In accordance with the provisions of the Louisiana Environmental Regulatory Code, LAC 33:III.509,

Williams Olefins, LLC
Post Office Box 470
Geismar, LA 70734

is authorized to construct and operate the proposed Geismar Ethylene Plant Expansion Project at

5205 Highway 3115
Geismar, Louisiana 70734

subject to the emissions limitations, monitoring requirements and other conditions set forth hereinafter.

This permit and authorization to construct shall expire at midnight on October 11, 2013, unless physical on site construction has begun by such date, or binding agreements or contractual obligations to undertake a program of construction of the source are entered into by such date.

Signed this 11th day of April, 2012.



Sam L. Phillips
Assistant Secretary
Office of Environmental Services

BRIEFING SHEET

**GEISMAR ETHYLENE PLANT EXPANSION PROJECT
AGENCY INTEREST NO. 5565
WILLIAMS OLEFINS, LLC
GEISMAR, ASCENSION PARISH, LOUISIANA
PSD-LA-759**

PURPOSE

To obtain a PSD permit for the proposed Geismar Ethylene Plant Expansion Project.

RECOMMENDATION

Approval of the proposed PSD permit.

REVIEWING AGENCY

Louisiana Department of Environmental Quality, Office of Environmental Services, Air Permits Division

PROJECT DESCRIPTION

Geismar Ethylene Plant produces ethylene and other co-products by the thermal reaction of ethane and propane in thirteen cracking furnaces. Effluent gas from the furnaces is processed through a continuous integrated equipment train to refine and fractionate the mixed hydrocarbon stream into final products. Steam for the processes is supplied by four steam boilers.

Williams Olefins, LLC requests a permit modification to implement the Geismar Ethylene Plant Expansion Project which will increase annual ethylene production from 1.40 to 1.95 billion pounds. The proposed project will include the following:

1. Installing a) two new olefin cracking heaters (180 MM BTU/hr each), which will be equipped with Selective Catalytic Reduction (SCR); b) a new electric-driven booster compressor; c) a new electric-driven refrigeration compressor; c) two new cells (equipped with drift eliminators) to the existing six-cell cooling tower.
2. Modifying the existing amine acid gas treating unit.
3. Replacing the existing elevated Olefin Plant Flare system with a low profile multi-head system designed to accommodate the increased plant throughput.
4. Routing all atmospheric emergency Pressure Relief Valves (PRVs) into the proposed Olefin Plant Flare.
5. Incorporating the proposed fugitive components into the existing Leak Detection and Repair (LDAR) program.

BRIEFING SHEET

GEISMAR ETHYLENE PLANT EXPANSION PROJECT
AGENCY INTEREST NO. 5565
WILLIAMS OLEFINS, LLC
GEISMAR, ASCENSION PARISH, LOUISIANA
PSD-LA-759

Emission in tons per year will be as follows:

Pollutant	Base Line Emissions	PTE	Baseline to Potential	PSD De Minimis	Netting Required
PM ₁₀	0.00	8.64	8.64	15	No
PM _{2.5}	-	8.30	8.30	10	No
SO ₂	151.30	184.78	33.48	40	No
NO _x	7.81	30.90	23.09	40	No
CO	42.47	116.0	73.53	100	No
VOC	5.21	29.18	23.97	40	No
CO ₂ e	387,051	569,316	182,265	75,000	Yes

TYPE OF REVIEW

PM₁₀/PM_{2.5}, SO₂, NO_x, CO and VOC emissions will not increase over the PSD significance levels. PSD review for these pollutants is not required. Greenhouse gas (GHG or CO₂e) emissions from the proposed facility will increase more than the PSD significance level. A netting analysis is required. Creditable emissions reductions within the contemporaneous period do not provide enough credits to net GHGs out of PSD review. PSD review is required for GHG emissions from the proposed project.

BEST AVAILABLE CONTROL TECHNOLOGY (BACT)

Williams Olefins will utilize 1) low-emitting feedstocks (ethane/propane); 2) energy efficient equipment (cracking heaters); 3) process design improvements (electric-driven booster compressor and replaced flare); and 4) lower-emitting and lower-carbon fuel (cracking heater off-gas with minimum of 25 volume percent of hydrogen as fuel (annual average)) as BACT for GHG emissions from the Geismar Ethylene Plant Expansion Project.

AIR QUALITY IMPACT ANALYSIS

Prevention of Significant Deterioration (PSD) regulations require an analysis of existing air quality for those pollutants emitted in significant amounts from a proposed facility. GHG was the pollutant of interest for this facility. There are no National Ambient Air Quality Standard (NAAQS) or PSD increments established for GHG. Therefore, the air quality impact analysis, including screening modeling, a PSD increment analysis, and refined modeling do not apply.

BRIEFING SHEET

GEISMAR ETHYLENE PLANT EXPANSION PROJECT
AGENCY INTEREST NO. 5565
WILLIAMS OLEFINS, LLC
GEISMAR, ASCENSION PARISH, LOUISIANA
PSD-LA-759

ADDITIONAL IMPACTS

Soils, vegetation, and visibility will not be adversely impacted by the proposed project, nor will any Class I area be affected. The project will not result in any significant secondary growth effects.

PROCESSING TIME

Application Dated:	December 12, 2011
Additional Information Dated:	-
Effective Completeness:	January 13, 2012

PUBLIC NOTICE

A notice requesting public comment on the permit was published in *The Advocate*, Baton Rouge, and in the *Gonzales Weekly Citizen*, Gonzales, on February 23, 2012; and was mailed to concerned citizens listed in the Office of Environmental Services Public Notice Mailing List. The permit application, the proposed permit, and the Statement of Basis were submitted to the Ascension Parish Library – Gonzales Branch. The proposed permit and the Statement of Basis were submitted to US EPA Region 6. No responses from the public were received during the comment period.

PRELIMINARY DETERMINATION SUMMARY

GEISMAR ETHYLENE PLANT EXPANSION PROJECT

AGENCY INTEREST NO. 5565

WILLIAMS OLEFINS, LLC

GEISMAR, ASCENSION PARISH, LOUISIANA

PSD-LA-759, JANUARY 13, 2012

I. APPLICANT

Williams Olefins, LLC
Post Office Box 470
Geismar, LA 70734

II. LOCATION

The Geismar Ethylene Plant is located at 5205 Highway 3115, Geismar, LA 70734. Approximate UTM coordinates are 687.60 kilometers East and 3,345.90 kilometers North, Zone 15.

III. PROJECT DESCRIPTION

Geismar Ethylene Plant produces ethylene and other co-products by the thermal reaction of ethane and propane in thirteen cracking furnaces. Effluent gas from the furnaces is processed through a continuous integrated equipment train to refine and fractionate the mixed hydrocarbon stream into final products. Steam for the processes is supplied by four steam boilers.

Williams Olefins, LLC requests a permit modification to implement the Geismar Ethylene Plant Expansion Project which will increase annual ethylene production from 1.40 to 1.95 billion pounds. The proposed project will include the following:

1. Installing a) two new olefin cracking heaters (180 MM BTU/hr each), which will be equipped with Selective Catalytic Reduction (SCR); b) a new electric-driven booster compressor; c) a new electric-driven refrigeration compressor; c) two new cells (equipped with drift eliminators) to the existing six-cell cooling tower.
2. Modifying the existing amine acid gas treating unit.
3. Replacing the existing elevated Olefin Plant Flare system with a low profile multi-head system designed to accommodate the increased plant throughput.
4. Routing all atmospheric emergency Pressure Relief Vales (PRVs) into the proposed Olefin Plant Flare.
5. Incorporating the proposed fugitive components into the existing Leak Detection and Repair (LDAR) program.

PRELIMINARY DETERMINATION SUMMARY

GEISMAR ETHYLENE PLANT EXPANSION PROJECT

AGENCY INTEREST NO. 5565

WILLIAMS OLEFINS, LLC

GEISMAR, ASCENSION PARISH, LOUISIANA

PSD-LA-759, JANUARY 13, 2012

Emission in tons per year will be as follows:

Pollutant	Base Line Emissions	PTE	Baseline to Potential	PSD De Minimis	Netting Required
PM ₁₀	0.00	8.64	8.64	15	No
PM _{2.5}	-	8.30	8.30	10	No
SO ₂	151.30	184.78	33.48	40	No
NO _x	7.81	30.90	23.09	40	No
CO	42.47	116.0	73.53	100	No
VOC	5.21	29.18	23.97	40	No
CO ₂ e	387,051	569,316	182,265	75,000	Yes

IV. SOURCE IMPACT ANALYSIS

A proposed net increase in the emission rate of criteria pollutants and greenhouse gases above de minimis levels for new major stationary sources or major modifications of existing major stationary sources requires review under Prevention of Significant Deterioration regulations, LAC 33:III.509. PSD review entails the following analyses:

- A. A determination of the Best Available Control Technology (BACT);
- B. An analysis of the existing air quality and a determination of whether or not preconstruction or post-construction monitoring will be required;
- C. An analysis of the source's impact on total air quality to ensure compliance with the National Ambient Air Quality Standards (NAAQS);
- D. An analysis of the PSD increment consumption;
- E. An analysis of the source related growth impacts;
- F. An analysis of source related growth impacts on soils, vegetation, and visibility;
- G. A Class I Area impact analysis; and
- H. Toxic impacts

A. BEST AVAILABLE CONTROL TECHNOLOGY

Under current PSD regulations, an analysis of "top down" BACT is required for the control of each regulated pollutant emitted from a modified major source in excess of the specified significant emission rates. The top down approach to the BACT process involves determining the most stringent control technique available for a similar or identical source. If it can be shown that this level of control is infeasible based on technical, environmental, energy, and/or cost considerations, then it is rejected and the

PRELIMINARY DETERMINATION SUMMARY

GEISMAR ETHYLENE PLANT EXPANSION PROJECT

AGENCY INTEREST NO. 5565

WILLIAMS OLEFINS, LLC

GEISMAR, ASCENSION PARISH, LOUISIANA

PSD-LA-759, JANUARY 13, 2012

next most stringent level of control is determined and similarly evaluated. This process continues until a control level is arrived at which cannot be eliminated for any technical, environmental, or economic reason. A technically feasible control strategy is one that has been demonstrated to function efficiently on identical or similar processes.

Williams Olefins, LLC requests a permit modification to implement the Geismar Ethylene Plant Expansion Project which will increase annual ethylene production from 1.40 to 1.95 billion pounds. Greenhouse gas (GHG) (including CO₂, CH₄, and N₂O) emissions from the proposed project will increase more than the PSD significance level. A netting analysis is required. Creditable emissions reductions within the contemporaneous period do not provide enough credits to net GHGs out of PSD review. PSD review, including BACT, is required for GHG emissions from the proposed project.

BACT for CO₂

CO₂ emissions can be controlled by utilizing 1) inherently low-emitting processes, practices, or designs; and/or 2) add-on control technologies.

An inherently low-emitting process is one that maximizes product yield and thermal efficiency while minimizing pollutant emissions. This is typically achieved by utilizing state-of-the-art equipment design that converts as much feedstock as possible to product, recovers as much energy as possible, minimizes fuel and energy use, or uses clean fuels. For CO₂, clean fuels are "low carbon" fuels or those that combust most efficiently, thereby emitting fewer CO₂ per unit of heat input.

To control CO₂ emissions from the Geismar Ethylene Plant Expansion Project, the inherently low-emitting processes, practices, or designs will include 1) selection of low-emitting feedstocks, 2) energy efficient equipment and process design improvements, and 3) use of lower-emitting and lower-carbon fuel.

The only potential add-on control technology for removing CO₂ from a gas stream is typically referred as "carbon capture and sequestration" (CCS), which consists of three stages: 1) removing or segregating CO₂ from the gas stream, 2) compressing and transporting the CO₂ to a storage facility, and 3) storing the CO₂ on a permanent or long-term basis.

CCS is a developing technology that has not been demonstrated in practice on full scale operations in a long term application such as would be required by BACT. CO₂ from the process could *theoretically* be captured by scrubbing the exhaust stream with solvents (e.g., amines, ammonia). However, separating CO₂ from this flue gas is challenging for the following reasons:

- trace impurities (particulate matter, sulfur oxides, nitrogen oxides, etc.) can degrade the CO₂ capture materials; and

PRELIMINARY DETERMINATION SUMMARY

GEISMAR ETHYLENE PLANT EXPANSION PROJECT

AGENCY INTEREST NO. 5565

WILLIAMS OLEFINS, LLC

GEISMAR, ASCENSION PARISH, LOUISIANA

PSD-LA-759, JANUARY 13, 2012

- compressing captured CO₂ from near atmospheric pressure to pipeline pressure (about 2000 pounds per square inch absolute) requires a large auxiliary power load.¹

EPA has also indentified "a low purity CO₂ stream" as a "significant and overwhelming technical" issue.²

According to the "Report of the Interagency Task Force on Carbon Capture and Storage," the U.S. Department of Energy (DOE) is pursuing three post-combustion CO₂ capture demonstration projects using currently available technologies; however, these projects are targeting pulverized coal-fired boilers (where the flue gas has a higher concentration of CO₂ by volume – 13 to 15 percent). In addition, the first is not scheduled to commence until 2014.³

There are no known installations where the post-combustion capture of CO₂ has been installed and operated successfully on olefins cracking heaters in the United States. According to EPA, an "applicant is generally not required to undergo extensive delays and expense to research and test unproven technologies as part of the BACT process." Further, the agency has held that "technologies in the pilot scale testing stages of development would not be considered available for BACT review."⁴ Therefore, LDEQ finds CO₂ capture to be technically infeasible.

The proposed project will be the expansion of the existing Geismar Ethylene Plant. There is no viable carbon dioxide storage (sequestration) in the area, such as enhanced oil recovery (EOR), saline aquifers, or any un-mined coal seams. Therefore, the CCS option is technically infeasible.

The remaining control options are 1) selection of low-emitting feedstocks, 2) energy efficient equipment and process design improvements, and 3) use of lower-emitting and lower-carbon fuel. LDEQ has determined these options are BACT for GHG emissions from the proposed project. The proposed BACT is detailed as follows:

Low-Emitting Feedstocks

Ethylene can be produced by cracking ethane/propane or naphtha/gasoil. The specific energy consumption (the energy required per quantity of product) when using naphtha as a feedstock is approximately 50 percent higher than when using ethane as a feedstock, and CO₂ emissions per ton of product are approximately 70 percent higher when using

¹ "Report of the Interagency Task Force on Carbon Capture and Storage," August 2010, pp. 29-30. This document is available at <http://www.epa.gov/climatechange/downloads/CCS-Task-Force-Report-2010.pdf>.

² "PSD and Title V Permitting Guidance for Greenhouse Gases," March 2011, pg. 36. This document is available at <http://www.epa.gov/nsr/ghgpermitting.html>.

³ "Report of the Interagency Task Force on Carbon Capture and Storage," pp. A-19-A-20

⁴ Draft New Source Review Workshop Manual, October 1990, pg. B.18

PRELIMINARY DETERMINATION SUMMARY

GEISMAR ETHYLENE PLANT EXPANSION PROJECT

AGENCY INTEREST NO. 5565

WILLIAMS OLEFINS, LLC

GEISMAR, ASCENSION PARISH, LOUISIANA

PSD-LA-759, JANUARY 13, 2012

naphtha. Additionally, the methane yield when using ethane as a feedstock is approximately a third of that of naphtha, while the hydrogen yield is four time greater.⁵

Both methane and hydrogen have the potential for use as a fuel gas, and ethylene production plants typically utilize the methane off-gas to fuel the cracking heaters. As hydrogen is a "zero carbon" fuel, a greater proportion of hydrogen in combustion fuel gas results in less carbon-intensive process heating.

Williams Olefins proposes to construct and operate two ethylene cracking heaters to convert ethane/propane to ethylene. This feedstock selection is equivalent to avoiding an additional 124,425 tons/year of CO₂e, as compared to the CO₂e increases that would result from the use of naphtha feedstock.⁶ Using ethane/propane as feedstock is determined as part of BACT for CO₂ emissions from the Geismar Ethylene Plant Expansion Project.

Energy Efficient Equipment and Process Design

The proposed cracking heaters will be designed to have a thermal efficiency of 92.5%, compared to the existing heaters of 89.1 to 89.6%. The radiant efficiency of the proposed heaters will be 43.7% compared to the existing heaters of 41.3 to 41.8%. The proposed heaters also have a higher ethylene yield on a feedstock weight percent basis as compared to the existing heaters.

Williams Olefins will utilize an electric-driven booster compressor to increase ethylene yield from both existing and proposed heaters. The existing flare of the plant will also be replaced. The proposed flare will not have either air- or steam-assist and will employ a scalable design, whereby the number of burners lit and the corresponding heat input can be controlled to match the quantity of waste gas to be flared. The flare will be semi-enclosed such that there will be no visible flame, and the multiple flames will be protected from exposure to wind.

The above described efficient equipment/process designs will minimize fuel input and feedstock, therefore minimizing the CO₂ emissions. These are determined as part of BACT for CO₂ emissions from the Geismar Ethylene Plant Expansion Project.

Lower Emitting and Lower-Carbon Fuels

Off-gas produced from the cracking heaters that used ethane/propane as a feedstock will have a high concentration of hydrogen. To minimize CO₂ emissions, Williams Olefins will use this off-gas stream as fuel. By combusting fuel gas with 25 volume percent of

⁵ Ren, Tao; Patel, Martin; and Blok, Kornelis, *Energy Efficiency and Innovative Emerging Technologies for Olefin Production*, Department of Science, Technology and Society, Faculty of Chemistry, Utrecht University, The Netherlands, 2004.

⁶ Based on 0.5 lbs of CO₂e/lb of ethylene production from ethane/propane (90/10) feedstock and 0.85 lbs of CO₂e/lb of ethylene production from naphtha feedstock.

PRELIMINARY DETERMINATION SUMMARY

GEISMAR ETHYLENE PLANT EXPANSION PROJECT

AGENCY INTEREST NO. 5565

WILLIAMS OLEFINS, LLC

GEISMAR, ASCENSION PARISH, LOUISIANA

PSD-LA-759, JANUARY 13, 2012

hydrogen in the plant heaters, approximately 106,044 tons of CO₂ emissions will be avoided per year. Using the heater off-gas with minimum 25 volume % of hydrogen (annual average) is determined as part of BACT for CO₂ emissions from the Geismar Ethylene Plant Expansion Project.

BACT for CH₄ and N₂O

The total projected GHG emissions will consist of less than 0.1% of CH₄ and N₂O. Therefore, an add-on control for CH₄ and N₂O emissions will not have significant effects on the total GHG emissions. No additional control is determined as BACT for CH₄ and N₂O emissions from the Geismar Ethylene Plant Expansion Project.

B. ANALYSIS OF EXISTING AIR QUALITY

Prevention of Significant Deterioration (PSD) regulations require an analysis of existing air quality for those pollutants emitted in significant amounts from a proposed modification. GHG is the pollutant of interest for this project. There are no National Ambient Air Quality Standard (NAAQS) or PSD increments established for GHG. Therefore, the air quality impact analysis, including screening modeling, a PSD increment analysis, and refined modeling do not apply.

C. NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) ANALYSIS

GHG is the pollutant of interest for this project. There are no National Ambient Air Quality Standard (NAAQS) established for GHG. Therefore, the air quality impact analysis, including refined modeling, does not apply.

D. PSD INCREMENT ANALYSIS

GHG is the pollutant of interest for this project. There are no PSD increments established for GHG. Therefore, the air quality impact analysis, including PSD increment analysis, does not apply.

E. SOURCE RELATED GROWTH IMPACTS

The project will not result in any significant secondary growth effects.

F. SOILS, VEGETATION, AND VISIBILITY IMPACTS

There will be no significant impact on soils, vegetation, and visibility.

G. CLASS I AREA IMPACTS

Breton National Wildlife Area, the nearest Class I area, is more than 100 kilometers from the site, precluding any significant impact.

PRELIMINARY DETERMINATION SUMMARY
GEISMAR ETHYLENE PLANT EXPANSION PROJECT
AGENCY INTEREST NO. 5565
WILLIAMS OLEFINS, LLC
GEISMAR, ASCENSION PARISH, LOUISIANA
PSD-LA-759, JANUARY 13, 2012

H. TOXIC IMPACT

The Geismar Ethylene Plant is a minor source of toxic air pollutants (TAP) and will remain a minor source of TAP after implementation of the project.

V. CONCLUSION

The Louisiana Department of Environmental Quality, Office of Environmental Services, has made a preliminary determination to approve the PSD permit (PSD-LA-759) for the Geismar Ethylene Plant Expansion Project at Geismar, Ascension Parish, Louisiana, subject to the attached specific and general conditions listed in LAC 33:III.537. In the event of a discrepancy in the provisions found in the application and those in this Preliminary Determination Summary, the Preliminary Determination Summary shall prevail.

SPECIFIC CONDITIONS

**GEISMAR ETHYLENE PLANT EXPANSION PROJECT
AGENCY INTEREST NO. 5565
WILLIAMS OLEFINS, LLC
GEISMAR, ASCENSION PARISH, LOUISIANA
PSD-LA-759**

1. The permittee is authorized to operate in conformity with the specifications submitted to the Louisiana Department of Environmental Quality (LDEQ) as analyzed in LDEQ's document entitled "Preliminary Determination Summary" dated January 13, 2012, and subject to the BACT determinations and emission limitations listed in the following conditions. Specifications submitted are contained in the application dated December 12, 2011.
2. Williams Olefins shall utilize 1) low-emitting feedstocks (ethane/propane); 2) energy efficient equipment (cracking heaters EQT0062 and EQT0063); 3) process design improvements (electric-driven booster compressor and replaced flare); and 4) lower-emitting and lower-carbon fuel (cracking heater off-gas with minimum of 25 volume percent of hydrogen, on an annual average basis, as fuel for EQT0062 and EQT0063) as BACT for GHG emissions from the Geismar Ethylene Plant Expansion Project. [LAC 33:III.509]
3. To ensure compliance with the 25% hydrogen requirement, permittee shall monitor and record fuels, and their hydrogen content, fed to Heater 95 and Heater 96 (EQT0062 and EQT0063). [LAC 33:III.509]
4. Permittee shall comply with the Louisiana General Conditions as set forth in LAC 33:III.537 [LAC 33:III.537].

Section 1. Registration Information

Source Identification

Facility Name:	Geismar Olefins Plant
Parent Company #1 Name:	The Williams Companies, Inc.
Parent Company #2 Name:	Williams Olefins LLC

Submission and Acceptance

Submission Type:	Re-submission
Subsequent RMP Submission Reason:	5-year update (40 CFR 68.190(b)(1))
Description:	
Receipt Date:	17-Jun-2009
Postmark Date:	17-Jun-2009
Next Due Date:	17-Jun-2014
Completeness Check Date:	04-Dec-2012
Complete RMP:	Yes
De-Registration / Closed Reason:	
De-Registration / Closed Reason Other Text:	
De-Registered / Closed Date:	
De-Registered / Closed Effective Date:	
Certification Received:	Yes

Facility Identification

EPA Facility Identifier:	1000 0009 8119
Other EPA Systems Facility ID:	70734NNTXSLAHWY

Dun and Bradstreet Numbers (DUNS)

Facility DUNS:	
Parent Company #1 DUNS:	824678478
Parent Company #2 DUNS:	68101286

Facility Location Address

Street 1:	5205 Highway 3115
Street 2:	
City:	Geismar
State:	LOUISIANA
ZIP:	70734
ZIP4:	
County:	IBERVILLE

Facility Latitude and Longitude

Latitude (decimal):	30.235833
Longitude (decimal):	-091.050556
Lat/Long Method:	Interpolation - Photo
Lat/Long Description:	Center of Facility
Horizontal Accuracy Measure:	25
Horizontal Reference Datum Name:	North American Datum of 1983
Source Map Scale Number:	24000

Owner or Operator

Operator Name:	Williams Olefins LLC
Operator Phone:	(225) 642-2100

Mailing Address

Operator Street 1:	P.O. Box 470
Operator Street 2:	5205 Hwy 3115
Operator City:	Geismar
Operator State:	LOUISIANA
Operator ZIP:	70734
Operator ZIP4:	
Operator Foreign State or Province:	
Operator Foreign ZIP:	
Operator Foreign Country:	

Name and title of person or position responsible for Part 68 (RMP) Implementation

RMP Name of Person:	L.G. Bayer
RMP Title of Person or Position:	Director, Gulf Olefins Operations
RMP E-mail Address:	larry.bayer@williams.com

Emergency Contact

Emergency Contact Name:	J.G. Berret
Emergency Contact Title:	Petrochemical Safety & IH Manager
Emergency Contact Phone:	(225) 642-2169
Emergency Contact 24-Hour Phone:	(225) 642-2132
Emergency Contact Ext. or PIN:	
Emergency Contact E-mail Address:	jake.berret@williams.com

Other Points of Contact

Facility or Parent Company E-mail Address:
Facility Public Contact Phone:
Facility or Parent Company WWW Homepage
Address:

Local Emergency Planning Committee

LEPC:	Iberville Parish LEPC
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Full Time Equivalent Employees

Number of Full Time Employees (FTE) on Site:	109
FTE Claimed as CBI:	

Covered By

OSHA PSM :	Yes
EPCRA 302 :	Yes
CAA Title V:	Yes
Air Operating Permit ID:	0180-00029V8

OSHA Ranking

OSHA Star or Merit Ranking:

Last Safety Inspection

Last Safety Inspection (By an External Agency) Date:	20-Feb-2008
Last Safety Inspection Performed By an External Agency:	State environmental agency

Predictive Filing

Did this RMP involve predictive filing?:

Preparer Information

Preparer Name:	P.R. Jordan
Preparer Phone:	(215) 504-5729
Preparer Street 1:	225 Pine Glen Road
Preparer Street 2:	
Preparer City:	Langhorne
Preparer State:	PENNSYLVANIA
Preparer ZIP:	19047
Preparer ZIP4:	
Preparer Foreign State:	
Preparer Foreign Country:	
Preparer Foreign ZIP:	

Confidential Business Information (CBI)

CBI Claimed:
Substantiation Provided:
Unsanitized RMP Provided:

Reportable Accidents

Reportable Accidents:	See Section 6. Accident History below to determine if there were any accidents reported for this RMP.
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Process Chemicals

Process ID:	1000001605
Description:	Olefins Manufacturing
Process Chemical ID:	1000001718
Program Level:	Program Level 3 process
Chemical Name:	Chlorine
CAS Number:	7782-50-5
Quantity (lbs):	12000
CBI Claimed:	
Flammable/Toxic:	Toxic

Process ID: 1000001605
Description: Olefins Manufacturing
Process Chemical ID: 1000001713
Program Level: Program Level 3 process
Chemical Name: 1,3-Butadiene
CAS Number: 106-99-0
Quantity (lbs): 2400000
CBI Claimed:
Flammable/Toxic: Flammable

Process ID: 1000001605
Description: Olefins Manufacturing
Process Chemical ID: 1000001716
Program Level: Program Level 3 process
Chemical Name: Ethane
CAS Number: 74-84-0
Quantity (lbs): 80000
CBI Claimed:
Flammable/Toxic: Flammable

Process ID: 1000001605
Description: Olefins Manufacturing
Process Chemical ID: 1000001714
Program Level: Program Level 3 process
Chemical Name: Propane
CAS Number: 74-98-6
Quantity (lbs): 200000
CBI Claimed:
Flammable/Toxic: Flammable

Process ID: 1000001605
Description: Olefins Manufacturing
Process Chemical ID: 1000001715
Program Level: Program Level 3 process
Chemical Name: Propylene [1-Propene]
CAS Number: 115-07-1
Quantity (lbs): 750000
CBI Claimed:
Flammable/Toxic: Flammable

Process ID: 1000001605
Description: Olefins Manufacturing
Process Chemical ID: 1000001717
Program Level: Program Level 3 process
Chemical Name: Ethylene [Ethene]
CAS Number: 74-85-1
Quantity (lbs): 130000
CBI Claimed:

Flammable/Toxic:

Flammable

Process NAICS

Process ID:	1000001605
Process NAICS ID:	1000001690
Program Level:	Program Level 3 process
NAICS Code:	32511
NAICS Description:	Petrochemical Manufacturing

Section 2. Toxics: Worst Case

Toxic Worst ID: 1000001198

Percent Weight:	
Physical State:	Gas liquified by pressure
Model Used:	EPA's RMP*Comp(TM)
Release Duration (mins):	10
Wind Speed (m/sec):	1.5
Atmospheric Stability Class:	F
Topography:	Urban

Passive Mitigation Considered

Dikes:
Enclosures:
Berms:
Drains:
Sumps:
Other Type:

Section 3. Toxics: Alternative Release

Toxic Alter ID: 1000001435

Percent Weight:	
Physical State:	Gas liquified by pressure
Model Used:	EPA's RMP*Comp(TM)
Wind Speed (m/sec):	3.0
Atmospheric Stability Class:	D
Topography:	Urban

Passive Mitigation Considered

Dikes:
Enclosures:
Berms:
Drains:
Sumps:
Other Type:

Active Mitigation Considered

Sprinkler System:
Deluge System:
Water Curtain:
Neutralization:
Excess Flow Valve:
Flares:
Scrubbers:
Emergency Shutdown:
Other Type:

Section 4. Flammables: Worst Case

Flammable Worst ID: 1000000454

Model Used:
Endpoint used:

EPA's RMP*Comp(TM)
1 PSI

Passive Mitigation Considered

Blast Walls:
Other Type:

Section 5. Flammables: Alternative Release

Flammable Alter ID: 1000000394

Model Used:

EPA's RMP*Comp(TM)

Passive Mitigation Considered

Dikes:

Fire Walls:

Blast Walls:

Enclosures:

Other Type:

Active Mitigation Considered

Sprinkler System:

Deluge System:

Water Curtain:

Excess Flow Valve:

Other Type:

Emergency Shutdown Valve (ESD)

Section 6. Accident History

Accident History ID: 1000000553

Date of Accident:	28-Jan-2009
Time Accident Began (HHMM):	2106
NAICS Code of Process Involved:	32511
NAICS Description:	Petrochemical Manufacturing
Release Duration:	000 Hours 03 Minutes

Release Event

Gas Release:	
Liquid Spill/Evaporation:	
Fire:	Yes
Explosion:	
Uncontrolled/Runaway Reaction:	

Release Source

Storage Vessel:	
Piping:	Yes
Process Vessel:	
Transfer Hose:	
Valve:	
Pump:	
Joint:	
Other Release Source:	Cracking Furnace Heat Exchanger

Weather Conditions at the Time of Event

Wind Speed:	5.0
Units:	miles/h
Direction:	N
Temperature:	48
Atmospheric Stability Class:	F
Precipitation Present:	
Unknown Weather Conditions:	

On-Site Impacts

Employee or Contractor Deaths:	0
Public Responder Deaths:	0
Public Deaths:	0
Employee or Contractor Injuries:	0
Public Responder Injuries:	0
Public Injuries:	0
On-Site Property Damage (\$):	115000

Known Off-Site Impacts

Deaths:	0
Hospitalization:	0
Other Medical Treatments:	0
Evacuated:	0

Sheltered-in-Place:	0
Off-Site Property Damage (\$):	0

Environmental Damage

Fish or Animal Kills:
Tree, Lawn, Shrub, or Crop Damage:
Water Contamination:
Soil Contamination:
Other Environmental Damage:

Initiating Event

Initiating Event:	Equipment Failure
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Contributing Factors

Equipment Failure:	Yes
Human Error:	
Improper Procedures:	
Overpressurization:	
Upset Condition:	
By-Pass Condition:	
Maintenance Activity/Inactivity:	
Process Design Failure:	Yes
Unsuitable Equipment:	
Unusual Weather Condition:	
Management Error:	
Other Contributing Factor:	

Off-Site Responders Notified

Off-Site Responders Notified:	Notified Only
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Changes Introduced as a Result of the Accident

Improved or Upgraded Equipment:	Yes
Revised Maintenance:	
Revised Training:	
Revised Operating Procedures:	Yes
New Process Controls:	
New Mitigation Systems:	
Revised Emergency Response Plan:	
Changed Process:	
Reduced Inventory:	
None:	
Other Changes Introduced:	

Confidential Business Information

CBI Claimed:

Chemicals in Accident History

Accident Chemical ID:	1000000553
Quantity Released (lbs):	60
Percent Weight:	
Chemical Name:	Flammable Mixture
CAS Number:	00-11-11
Flammable/Toxic:	Flammable

Flammable Mixture Chemical Components in Accident History

Accident Chemical Flammable Mixture ID:	2439
Chemical Name:	Propane
Flammable/Toxic:	Flammable
Accident Chemical Flammable Mixture ID:	2443
Chemical Name:	Ethylene [Ethene]
Flammable/Toxic:	Flammable
Accident Chemical Flammable Mixture ID:	2442
Chemical Name:	1,3-Butadiene
Flammable/Toxic:	Flammable
Accident Chemical Flammable Mixture ID:	2441
Chemical Name:	Ethane
Flammable/Toxic:	Flammable
Accident Chemical Flammable Mixture ID:	2440
Chemical Name:	Propylene [1-Propene]
Flammable/Toxic:	Flammable

Accident History ID: 1000026177

Date of Accident:	05-Sep-2012
Time Accident Began (HHMM):	1412
NAICS Code of Process Involved:	32511
NAICS Description:	Petrochemical Manufacturing
Release Duration:	000 Hours 01 Minutes

Release Event

Gas Release:	
Liquid Spill/Evaporation:	
Fire:	
Explosion:	Yes
Uncontrolled/Runaway Reaction:	

Release Source

Storage Vessel:	
Piping:	
Process Vessel:	
Transfer Hose:	
Valve:	
Pump:	
Joint:	
Other Release Source:	Furnace

Weather Conditions at the Time of Event

Wind Speed:	3.0
Units:	miles/h
Direction:	W
Temperature:	87
Atmospheric Stability Class:	B
Precipitation Present:	
Unknown Weather Conditions:	

On-Site Impacts

Employee or Contractor Deaths:	0
Public Responder Deaths:	0
Public Deaths:	0
Employee or Contractor Injuries:	0
Public Responder Injuries:	0
Public Injuries:	0
On-Site Property Damage (\$):	9000000

Known Off-Site Impacts

Deaths:	0
Hospitalization:	0
Other Medical Treatments:	0
Evacuated:	0
Sheltered-in-Place:	0
Off-Site Property Damage (\$):	0

Environmental Damage

Fish or Animal Kills:
Tree, Lawn, Shrub, or Crop Damage:
Water Contamination:
Soil Contamination:
Other Environmental Damage:

Initiating Event

Initiating Event:	Human Error
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Contributing Factors

Equipment Failure:	
Human Error:	Yes
Improper Procedures:	Yes
Overpressurization:	
Upset Condition:	
By-Pass Condition:	
Maintenance Activity/Inactivity:	
Process Design Failure:	
Unsuitable Equipment:	
Unusual Weather Condition:	
Management Error:	

Other Contributing Factor:

Off-Site Responders Notified

Off-Site Responders Notified: No, not notified

Changes Introduced as a Result of the Accident

Improved or Upgraded Equipment: Yes
Revised Maintenance:
Revised Training: Yes
Revised Operating Procedures: Yes
New Process Controls: Yes
New Mitigation Systems:
Revised Emergency Response Plan:
Changed Process:
Reduced Inventory:
None:
Other Changes Introduced:

Confidential Business Information

CBI Claimed:

Chemicals in Accident History

Accident Chemical ID: 1000020369
Quantity Released (lbs): 1
Percent Weight:
Chemical Name: Flammable Mixture
CAS Number: 00-11-11
Flammable/Toxic: Flammable

Flammable Mixture Chemical Components in Accident History

Accident Chemical Flammable Mixture ID: 1000002683
Chemical Name: Ethane
Flammable/Toxic: Flammable

Accident Chemical Flammable Mixture ID: 1000002701
Chemical Name: Propane
Flammable/Toxic: Flammable

Section 7. Program Level 3

Description

Geismar Olefins Plant

Program Level 3 Prevention Program Chemicals

Prevention Program Chemical ID: 1000001157
Chemical Name: Propane
Flammable/Toxic: Flammable
CAS Number: 74-98-6

Prevention Program Level 3 ID: 1000000990
NAICS Code: 32511

Prevention Program Chemical ID: 1000001156
Chemical Name: 1,3-Butadiene
Flammable/Toxic: Flammable
CAS Number: 106-99-0

Prevention Program Level 3 ID: 1000000990
NAICS Code: 32511

Prevention Program Chemical ID: 1000001158
Chemical Name: Propylene [1-Propene]
Flammable/Toxic: Flammable
CAS Number: 115-07-1

Prevention Program Level 3 ID: 1000000990
NAICS Code: 32511

Prevention Program Chemical ID: 1000001161
Chemical Name: Chlorine
Flammable/Toxic: Toxic
CAS Number: 7782-50-5

Prevention Program Level 3 ID: 1000000990
NAICS Code: 32511

Prevention Program Chemical ID: 1000001160
Chemical Name: Ethylene [Ethene]
Flammable/Toxic: Flammable
CAS Number: 74-85-1

Prevention Program Level 3 ID: 1000000990
NAICS Code: 32511

Prevention Program Chemical ID: 1000001159
Chemical Name: Ethane
Flammable/Toxic: Flammable
CAS Number: 74-84-0

Prevention Program Level 3 ID: 1000000990
NAICS Code: 32511

Safety Information

Safety Review Date (The date on which the safety information was last reviewed or revised): 13-Apr-2009

Process Hazard Analysis (PHA)

PHA Completion Date (Date of last PHA or PHA update): 07-May-2009

The Technique Used

What If:
Checklist:
What If/Checklist:
HAZOP: Yes
Failure Mode and Effects Analysis:
Fault Tree Analysis:
Other Technique Used:
PHA Change Completion Date (The expected or actual date of completion of all changes resulting from last PHA or PHA update): 31-Dec-2014

Major Hazards Identified

Toxic Release: Yes
Fire: Yes
Explosion: Yes
Runaway Reaction:
Polymerization:
Overpressurization: Yes
Corrosion: Yes
Overfilling: Yes
Contamination: Yes
Equipment Failure: Yes
Loss of Cooling, Heating, Electricity, Instrument Air: Yes
Earthquake:
Floods (Flood Plain): Yes
Tornado:
Hurricanes: Yes
Other Major Hazard Identified:

Process Controls in Use

Vents:	Yes
Relief Valves:	Yes
Check Valves:	Yes
Scrubbers:	
Flares:	Yes
Manual Shutoffs:	Yes
Automatic Shutoffs:	Yes
Interlocks:	Yes
Alarms and Procedures:	Yes
Keyed Bypass:	Yes
Emergency Air Supply:	Yes
Emergency Power:	Yes
Backup Pump:	Yes
Grounding Equipment:	Yes
Inhibitor Addition:	Yes
Rupture Disks:	Yes
Excess Flow Device:	Yes
Quench System:	
Purge System:	Yes
None:	
Other Process Control in Use:	

Mitigation Systems in Use

Sprinkler System:	Yes
Dikes:	Yes
Fire Walls:	
Blast Walls:	
Deluge System:	Yes
Water Curtain:	
Enclosure:	
Neutralization:	
None:	
Other Mitigation System in Use:	

Monitoring/Detection Systems in Use

Process Area Detectors:	Yes
Perimeter Monitors:	Yes
None:	
Other Monitoring/Detection System in Use:	

Changes Since Last PHA Update

Reduction in Chemical Inventory:	
Increase in Chemical Inventory:	
Change Process Parameters:	
Installation of Process Controls:	
Installation of Process Detection Systems:	
Installation of Perimeter Monitoring Systems:	
Installation of Mitigation Systems:	
None Recommended:	
None:	Yes

Other Changes Since Last PHA or PHA Update:

Review of Operating Procedures

Operating Procedures Revision Date (The date of the most recent review or revision of operating procedures): 31-Mar-2009

Training

Training Revision Date (The date of the most recent review or revision of training programs): 30-Nov-2008

The Type of Training Provided

Classroom: Yes
On the Job: Yes
Other Training:

The Type of Competency Testing Used

Written Tests: Yes
Oral Tests: Yes
Demonstration: Yes
Observation: Yes
Other Type of Competency Testing Used:

Maintenance

Maintenance Procedures Revision Date (The date of the most recent review or revision of maintenance procedures): 12-Feb-2009

Equipment Inspection Date (The date of the most recent equipment inspection or test): 21-Apr-2009

Equipment Tested (Equipment most recently inspected or tested): GB-102 Induced Furnace Fan

Management of Change

Change Management Date (The date of the most recent change that triggered management of change procedures): 16-Apr-2009

Change Management Revision Date (The date of the most recent review or revision of management of change procedures): 09-Sep-2008

Pre-Startup Review

Pre-Startup Review Date (The date of the most recent pre-startup review): 09-Apr-2009

Compliance Audits

Compliance Audit Date (The date of the most recent compliance audit): 31-Dec-2009

Compliance Audit Change Completion Date (Expected or actual date of completion of all changes resulting from the compliance audit): 08-May-2007

Incident Investigation

Incident Investigation Date (The date of the most recent incident investigation (if any)): 05-Sep-2012

Incident Investigation Change Date (The expected or actual date of completion of all changes resulting from the investigation): 31-Mar-2013

Employee Participation Plans

Participation Plan Revision Date (The date of the most recent review or revision of employee participation plans): 08-May-2007

Hot Work Permit Procedures

Hot Work permit Review Date (The date of the most recent review or revision of hot work permit procedures): 08-May-2007

Contractor Safety Procedures

Contractor Safety Procedures Review Date (The date of the most recent review or revision of contractor safety procedures): 12-Mar-2009

Contractor Safety Performance Evaluation Date (The date of the most recent review or revision of contractor safety performance): 20-Apr-2009

Confidential Business Information

CBI Claimed:

Section 8. Program Level 2

Section 9. Emergency Response

Written Emergency Response (ER) Plan

Community Plan (Is facility included in written community emergency response plan?): Yes

Facility Plan (Does facility have its own written emergency response plan?): Yes

Response Actions (Does ER plan include specific actions to be taken in response to accidental releases of regulated substance(s)?): Yes

Public Information (Does ER plan include procedures for informing the public and local agencies responding to accidental release?): Yes

Healthcare (Does facility's ER plan include information on emergency health care?): Yes

Emergency Response Review

Review Date (Date of most recent review or update of facility's ER plan): 20-Mar-2009

Emergency Response Training

Training Date (Date of most recent review or update of facility's employees): 14-Apr-2009

Local Agency

Agency Name (Name of local agency with which the facility ER plan or response activities are coordinated): Ascension & Iberville LEPC's

Agency Phone Number (Phone number of local agency with which the facility ER plan or response activities are coordinated): (225) 621-8300

Subject to

OSHA Regulations at 29 CFR 1910.38: Yes

OSHA Regulations at 29 CFR 1910.120: Yes

Clean Water Regulations at 40 CFR 112: Yes

RCRA Regulations at CFR 264, 265, and 279.52: Yes

OPA 90 Regulations at 40 CFR 112, 33 CFR 154, 49 CFR 194, or 30 CFR 254: Yes

State EPCRA Rules or Laws: Yes

Other (Specify): MTSA (33 CFR Part 101, 103 and 105)

Executive Summary

17854 LDEQ Facility ID Number

Executive Summary
Williams Olefins
Geismar Ethylene Plant
Geismar, Louisiana

Accidental Release Prevention and Response Policies

The Williams Olefins, Geismar Ethylene Plant has a long-standing commitment to protect employees, the community and the environment. This commitment is demonstrated by the resources invested in accident prevention, such as training personnel and considering safety and environmental consequences in the design, installation, operation, and maintenance of our processes. Our policy is to implement reasonable controls to prevent foreseeable releases of hazardous materials. However, if a release does occur, our trained emergency response personnel will respond to control, contain and mitigate the release.

Description of the Stationary Source and Regulated Substances

The Geismar Ethylene Plant, located in Geismar, Louisiana, operates an olefins facility to produce ethylene, propylene, crude butadiene and debutanized aromatic concentrate from ethane and propane feedstocks. The Geismar Ethylene Plant is subject to the requirements of 40 CFR Part 68, Chemical Accident Prevention Provisions. The Geismar Ethylene Plant has regulated flammable substances including, propane, 1,3-butadiene, propylene, ethylene and ethane. Additionally, the plant uses chlorine, which is also a regulated toxic substance.

Five-Year Accident History

The Geismar Ethylene Plant has had an excellent record of accident prevention over the past 5 years. Every incident is investigated very carefully to determine ways to prevent the incident or similar incidents from recurring.

Approximately 60 pounds of a flammable mixture was released in 2009 due to a mechanical failure. The resulting fire caused property damage. The equipment was re-designed following this incident and the written operating procedures were revised. No injuries or off-site impacts resulted from this accident.

Less than 1 pounds of a flammable mixture was released in 2012 when improper procedures were followed on a furnace. The resulting explosion caused property damage. The flammable mixture was consumed during the explosion. New process controls are being added, operating procedures are being revised, and additional training will be conducted as a result of this accident.

General Accidental Release/Chemical-Specific Prevention Programs Steps

An accident prevention program is in place at the Geismar Ethylene Plant. Because the process at the Geismar Ethylene Plant is regulated by the EPA Risk Management Program (RMP) regulation and is also subject to the OSHA Process Safety Management (PSM) standard, the elements of these programs are listed below. Collectively, these prevention program activities help minimize potential accident scenarios that could be caused by (1) equipment failures and (2) human errors.

Employee Participation
Process Safety Information
Process Hazard Analysis (PHA)
Operating Procedures
Training
Contractors
Pre-startup Safety Reviews

Mechanical Integrity
Safe Work Practices
Management of Change
Incident Investigation
Compliance Audits

The Geismar Ethylene Plant also has a security plan in place designed to comply with the Maritime Transportation Security Act (MTSA). The MTSA is a federal law designed to protect U.S. ports and waterways from a terrorist attack. It requires measures to control access to facilities and vessels that might be vulnerable to an incident resulting in a significant loss of life, environmental damage, transportation system disruption, or economic disruption.

Emergency Response Program Information

The Geismar Ethylene Plant maintains a written emergency control program, which is in place to protect worker and public safety as well as the environment. The program consists of procedures for responding to a release of a regulated substance, including the possibility of a fire or explosion if a flammable substance is accidentally released. The procedures address all aspects of emergency response, including proper first-aid and medical treatment for exposures, evacuation plans and accounting for personnel after evacuation, notification of local emergency response agencies and the public if a release occurs, and post incident cleanup and decontamination requirements. In addition, the Geismar Ethylene Plant has procedures that address maintenance, inspection, and testing of emergency response equipment, as well as instructions that address the use of emergency response equipment. Employees receive training in these procedures as necessary to perform their specific emergency response duties. The emergency control program is updated when necessary based on modifications made to Geismar Ethylene Plant processes or other Geismar Ethylene Plant facilities.

The overall emergency control program for the Geismar Ethylene Plant is coordinated with the Ascension and Iberville Parishes Local Emergency Planning Committees (LEPC). This coordination includes periodic meetings of the committees, which include local emergency state officials, local government officials, and industry representatives. The Geismar Ethylene Plant has communications capability with appropriate officials and emergency response organizations (e.g., sheriff's office, Geismar Area Mutual Aid, complex emergency brigade, etc.). This provides a means of notifying the public of an incident, if necessary, as well as facilitating quick response to an incident. In addition to periodic LEPC meetings, the Geismar Ethylene Plant conducts periodic emergency drills.

Planned Changes to Improve Safety

The Geismar Ethylene Plant is committed to operating our facility in a safe and responsible manner. We are continually evaluating our equipment and procedures to meet this objective and have identified recommendations during past studies. These recommendations are currently being implemented where appropriate.